

Implementing Dynamic Commerce Solutions

A Guide to the Critical Success Factors for Creating Online Exchanges and Auctions

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EXECUTIVE SUMMARY

As outlined in this document's companion white paper, *An Introduction to Dynamic Commerce and Negotiated e-Commerce*, a whole new breed of highly interactive marketplaces, such as trading exchanges and auctions, are now emerging as the dominant force of commerce on the Internet.

Dynamic commerce can generally be defined as "the buying and selling of goods and services through flexible pricing models that allow prices to change over time." As markets evolve so too does dynamic commerce, which has grown to include negotiated e-commerce, a form of advanced online negotiations and bidding functions. While the power of these new applications is undeniable, successful implementation requires a clear understanding of the key business objectives and technology issues involved.

Because the implementation of dynamic commerce exchanges and auction environments requires more than simply moving existing practices to the Internet, system designers must understand both the business issues and the technology considerations associated with creating effective sites. In keeping with Moai's commitment to providing comprehensive solutions and technology leadership in dynamic commerce, this document provides a high-level roadmap of relevant issues and guidelines that an organization should take into account when considering the implementation of dynamic commerce.

This paper concludes with an explanation of how Moai's LiveExchange solutions can provide businesses with a fast and straightforward means to incorporate dynamic commerce into online strategies.

UNDERSTANDING TARGET MARKETS AND BUSINESS OBJECTIVES

Before design of a dynamic commerce solution can begin, a company must develop an understanding of its target markets, customers, and business objectives. Critical to this process is an examination and definition of the following goals and market attributes:

Models and Markets

Dynamic commerce can generally be divided into two basic models. In the first model, an individual company sells or procures products or services directly to one or more partners. This is called an Enterprise Model and is most often used to address procurement and inventory management objectives of a single company. In the second

- A single seller or intermediary marketplace
- A public or private marketplace
- Amount and type of goods or services offered
- Types and number of trading partners participating

model, called the Marketplace Model, companies bring together multiple buyers and sellers in an independently managed online marketplace. The Marketplace Model can be used to create targeted exchanges to serve a particular industry or market.

The enterprise and marketplace models can also be mixed and matched by e-commerce portals and application service providers to host a broad range of trading environments.

These trading models can be further subdivided into two types of markets based on the nature of the relationship between participants and traders. If the transactions take place in an open environment, where buyers and sellers are unfamiliar with one another and their respective business practices, the market is called a public environment. On the other hand, if participants and traders conduct their business in a closed environment, where there is a high degree of mutual awareness and trust, the marketplace is called a private environment.

As a business explores the possibility of incorporating dynamic commerce in an e-commerce solution, it must consider which of these models and marketplaces will best meet its overall business goals. This consideration is the first step in identifying how a business will conduct online dynamic commerce. While many requirements will be identical or similar among these variations, each model does require some specific features.

The following table highlights the key differences in each variation:

	Enterprise Model	Marketplace Model
Private Environment	<ul style="list-style-type: none"> • A business conducts commerce with its own buyers or suppliers • Participants often have existing relationships and contractual obligations 	<ul style="list-style-type: none"> • A business establishes a community of buyers and sellers • Participants are screened before admitted, to foster a stable environment
Public Environment	<ul style="list-style-type: none"> • Businesses sell to new or existing customers • New customers may enter the exchange, but do not necessarily need to be invited to do so • Existing agreements may or may not exist 	<ul style="list-style-type: none"> • A business brings together buyers and sellers • Buyers and sellers can join the exchange with less stringent screening • Trust is built through experience and comments by other participants

Amount and Type of Goods or Services Offered

In the Enterprise Model, the identification of products or services offered is fairly straightforward because the company has direct control over all items for sale. While most early corporate experiments with online dynamic commerce used auctions focused on moving obsolete or slow-moving inventory, experience has shown that Internet exchanges can also be a significant revenue generator for new products or a cost-saving mechanism for procurement. When implementing dynamic commerce for its own products, however, a company must consider the potential impact on its existing business processes and distribution channels. For example, discontinued or obsolete items could be openly offered to a relatively large group of buyers, while refurbished or excess new items might be made available only to a small group of carefully selected partners.

In the Marketplace Model, a business must define the categories of products, services, or commodities that will be traded in the online exchange environment. Not only will the number and types of products be key factors in establishing the online exchange's brand identity, but also they will ultimately determine the overall structure and complexity of the trading environment. For example, a trading exchange that is focused on creating a b2b dynamic commerce market for medical equipment would likely have separate categories for capital items versus consumables and might also trade in health services and other ancillary activities.

For both Enterprise and Marketplace implementations, the growing number of different products and categories that must be accommodated has become a critical factor that requires a highly scalable system infrastructure. Additionally, the need to control access to different product categories, based upon specific user profiles, also requires an advanced level of built-in security and system robustness.

Type and Number of Participating Trading Partners

Another important factor impacting system design is the type and number of active participants in the dynamic commerce market. For example, professional users, such as brokers or inventory liquidators, typically require highly efficient methods to handle a portfolio of different bids. Typically, these customers will actively bid right up until the exchange closes. On the other hand, more casual users, such as resellers who want to fill inventory shortages, will probably be less active. These customers can often take advantage of automated notifications and proxy bidding features that minimize the amount of time spent actively participating in the exchange.

Here again, the number and types of participants can be a key factor in dictating the level of system scalability and robustness. The underlying architecture must support routine trading levels while also effectively handling spikes and peaks in activity without experiencing slow-downs, dropped bids, or other problems. In addition, the system should provide ample flexibility to allow the dynamic commerce model to grow and change as information about customers' buying habits accumulates in the system database.

Revenue and Inventory Management Goals

Dynamic commerce markets should be customizable to meet each company's specific objectives, such as maximizing revenue or rapidly liquidating inventory. Choosing from among many different auction and pricing formats significantly impacts market dynamics and results. For example:

- Exchanges with limited items open for long time periods can generate higher revenues
- Exchanges of large lot sizes open for shorter time periods are better for rapid inventory liquidation
- Traditional ascending price English auction format maximizes revenue
- Declining price Dutch format is used to move merchandise quickly

- B2b reverse auctions are effective for procurement and Request for Quote (RFQ) bidding
- Structured negotiations are used for more complex negotiation processes that incorporate multiple bidding parameters and multiple stages

Business requirements are invariably subject to change; so a solution should provide flexibility that allows easy redefinition and mixing of pricing formats, lot sizes, time periods, etc. While the

most significant opportunities in dynamic commerce are just now beginning to emerge, ultimate success will likely depend upon which competitors can quickly adapt to changing market requirements. Needless to say, those companies that have chosen scalable and extensible system infrastructures will be well positioned against those that must make wholesale alterations or total system replacements in order to accommodate changes.

BUILD, BUY, OR A SELECT A HOSTING PROVIDER

Once business objectives are understood and defined, the next decision to make is which implementation path to follow. A business interested in augmenting an e-commerce strategy with dynamic commerce capabilities has three choices. As with most IT projects, the solution can be built in-house. Alternatively, solutions can be purchased and integrated into existing systems. Finally, a hosting provider can be selected that will develop and host the solution, which may include integration with a customer's existing infrastructure.

Building a System In-House

Businesses that want a fairly rudimentary solution, may want to consider building their own dynamic commerce system. However, the more complex the business requirements, the more costly this option becomes. First and foremost, a company must determine if it has the personnel available for development. If the resources are not readily available, recruiting and hiring the appropriate personnel will prove to be an expensive activity and could delay time-to-market.

If a company has the required resources but lacks experience with dynamic commerce applications, a solution may not be adequately designed to address future growth and requirements. For example, adding features such as shipping and tracking capabilities becomes difficult if the system was not originally designed to be extensible.

Many e-commerce providers have already developed strong relationships with third party service providers, which makes integration straightforward. Generally, then, the fast-moving nature and complexity of dynamic commerce makes in-house development and ongoing maintenance a difficult proposition for all but the simplest of implementations. The remainder of this paper assumes that an in-house solution will not be developed and addresses the issues of those

companies that plan to license a solution or select a hosting provider.

Purchasing a Solution

If a company decides not to build a system in-house, then the choice becomes whether to purchase or license a solution or to turn to a hosting provider. Fortunately, some well-established companies have already made the substantial investment required to develop highly extensible software architectures and have the partnerships necessary to implement and maintain complete dynamic commerce solutions.

These companies have spent years developing and refining dynamic commerce applications so that organizations interested in hosting online auctions and exchanges can do so in a matter of weeks, instead of requiring several years of internal development and additional human resources. Licensing a solution is most useful to businesses that want total ownership and control over their site. This option often lends itself better to backend business system integration as well.

Most companies that invest in dynamic commerce software also choose to invest in a systems integrator to help create the commerce site and integrate it with current workflow systems. This additional investment should be considered when selecting a solution. Ensure that the provider offers solid partnerships with reputable systems integrators.

Selecting a Hosting Provider

An alternative to licensing or purchasing software is to turn to a service that hosts online exchanges and auctions. Outsourcing is an attractive option for companies that have immediate time-to-market requirements. These service providers allow businesses to completely outsource their Internet dynamic commerce needs.

The primary advantages of outsourcing are time-to-market, a reduced need for IT personnel for

development and ongoing maintenance and administration, and no up-front investments in additional hardware, bandwidth, and other infrastructure. If outsourced hosting is selected, the provider should still allow and assist with any backend integration, site branding, and design.

Whether a company purchases a solution or selects a hosting provider, the technical requirements for an effective dynamic commerce implementation are largely the same.

SELECTING A DYNAMIC COMMERCE SOLUTION

A successful dynamic commerce implementation should include the enabling architecture, features and support structures to meet business goals and suit the needs of customers without becoming an administrative burden. While the buy or hosted decision will affect the relative importance of each factor, these requirements apply to both cases. The hosted or licensed solution should include:

- A robust, scalable, enterprise-level architecture
- Feature rich functionality
- Flexible customization and integration
- Built-in standards-based security
- Ease of administration
- Internationalization
- Training and support during installation and integration

Robust, Scalable, Enterprise-level Architecture

Perhaps the most important element to consider when implementing a dynamic commerce solution is the core architecture. The architecture should be robust and scalable so that it can meet the demands of increased traffic. Robust scalability requires well-planned architectural partitioning that anticipates where major system demands will occur and dedicates appropriate resources to manage those demands. Typically, many e-commerce applications rely on CGI scripting to communicate with the server in a traditional two-tiered client/server paradigm. In response to every CGI-generated client request the server searches the database until it finds and returns the required data. A two-tiered structure is a relatively simple design that is vulnerable to internal congestion with wide variations in response time. This result occurs because the system is not specifically tailored to handle the rigors of escalating transactions.

Well-designed enterprise-level Internet applications employ a multi-tier architecture to minimize potential performance bottlenecks

within the system, while maintaining high levels of flexibility. This type of architecture typically separates the application into multiple layers to handle data management, business rules, interaction with end-users, and the graphical display of information. Each of these layers can be optimized by employing techniques, such as caches and effective queue-based communication, which allow the system to handle peaks of activity in the individual layers of the architecture without slowing down the whole system.

This type of multi-tiered architecture lends itself well to managing bidding activity. Critical to the architecture is the number of bids or requests that can be processed completely in a given time period. Bidding is not only the most complex process in the system, but also the most crucial to log correctly in the database. The application should employ a queue-based system that allows large numbers of bid submissions during periods of peak activity. Because the number of bids that can be processed in a given time period is imperative to the success of an online auction or exchange, a company should try to estimate the amount of activity it expects and ensure the application can manage that amount of traffic.

Overall system performance is further enhanced by effectively managing end-user interaction with the system. Intelligent caching should be employed to ensure smooth transactions between the end-user and the system. Mechanisms that can deliver real-time information to end-users with a minimum of demand on the core server or having high bandwidth requirements are also beneficial and make the system appear highly responsive.

Feature Rich Functionality

Many e-commerce applications share a common set of basic features. However, effective solutions for dynamic commerce should include a broad range of features and allow feature customization for more specific needs. Rich feature sets include several pricing formats to facilitate a variety of auctions, complex negotiations, trading exchanges, and procurement marketplaces. An

effective solution will also have the ability to create a compelling end-user experience to keep participants returning to the Web site. Specific features include flexible product category definition, multiple parameter bidding, featured items and sales, multiple stage negotiations, effective product searching, and email alerts. End-users should also be given extensive account preference and maintenance functions such as password lookup, bid list maintenance, self-registration, etc.

Flexible Customization and Integration

The end-user experience should be easy to customize and brand while not limiting the flexibility for designing the look and feel of the system. It should provide control over:

- Site look and feel
- Branding elements
- Options for including internal and external advertisements
- Product categorization
- Marketplace parameters such as pricing formats and trading exchange determinants (including price, delivery time, quality of goods, warranty, and others)

The administrator should be able to modify many of these elements using straightforward tools. These attributes are fundamental to ensuring that the company maintains complete control over the marketplace and all of its functionality.

Ideally, the architecture should be compatible with industry standard relational databases and allow easy data sharing with other applications to facilitate analysis of marketplace data. The architecture should also include an open Application Program Interface (API) and support for XML that allows integration with other networks and internal applications, such as inventory management, order processing, and accounting packages. An additional advantage to a well-designed, extensible, and open architecture is that these solutions are much easier to modify with ongoing enhancements.

Built-in Standards-based Security

Dynamic commerce systems must allow for encrypted communications that use industry standards such as Secure Sockets Layer (SSL), Secure HTTP, and digital certificates. Additionally, a flexible security model for assigning user rights allows a system administrator to set security for individual users and groups, allowing different levels of access to the system. Security levels should allow limiting access to specific areas of the site or restrict certain features. This type of security model enables an administrator to develop highly focused groups of markets and users which helps eliminate channel conflict and allows for effective targeted marketing to end-users.

Administration Tools

Dynamic commerce solutions should have a complete set of tools for data administration. The tools should be full-featured but easy to use and allow remote access of the system. The administration tools should permit retrieval and maintenance of customer information, such as permission status and billing information. A complete set of reporting tools should also be provided for generating information on market and customer activity, tracking banner ad click-throughs, etc.

Internationalization

The global reach of the Internet means that a company could have dynamic commerce participants from anywhere in the world. International support, therefore, may be another primary consideration in selecting a solution. Ideally, participants should be able to view information in their native language. They should also have the option to bid using local currency while having a clear understanding of exchange rates between their own currency and that of the hosting company. The best solutions will let each participant set their own preferences for language and currency via their personal preference settings, without administrator intervention.

Training and Support During Installation and Integration

Companies hosting their own dynamic commerce marketplaces should look for installation, training, and support assistance from their supplier. The amount of support needed depends largely on the amount of customization and integration work required. The installation of standard components, such as databases and the e-commerce server, can usually be done in a day or two with a single IT resource (either from in-house or from the supplier). Typically, these products have wizard-based installation programs and experienced personnel are usually not required.

The biggest challenge is integration of the solution with existing business systems. In this respect, deploying a dynamic commerce solution is similar to integrating any enterprise application.

The company must define the resources, procedures, and interfaces required to accommodate the new system. The flow of data must be understood and any new programs or processes must be designed, implemented, and tested. The effort required is primarily dependent upon the level of customization and automation required to support the system. The integration process can be performed either internally or by the supplier or one of its integration partners.

In any case, support and training should be available during all phases of installation, implementation and after the system is in place. It should include documentation and training on the use of all API's, system functions, and ongoing administration features. Sample programs and Web site templates should be provided as a basis for training that can be used during deployment.

MOAI'S LIVEEXCHANGE™ DYNAMIC COMMERCE SOLUTIONS

Moai is a leading provider of dynamic commerce solutions for online exchanges, auctions, and procurement. Moai's solutions address the unique challenges faced by companies looking to initiate or expand their e-commerce initiatives in the technologically complex and rapidly changing Internet business climate. While Moai's primary focus is on customers in the business-to-business market, the company also has customers in the business-to-consumer and consumer-to-consumer markets. The LiveExchange solutions include:

LiveExchange Enterprise:

Designed for companies that want to create exchanges or auctions for asset management, procurement or new revenue streams.

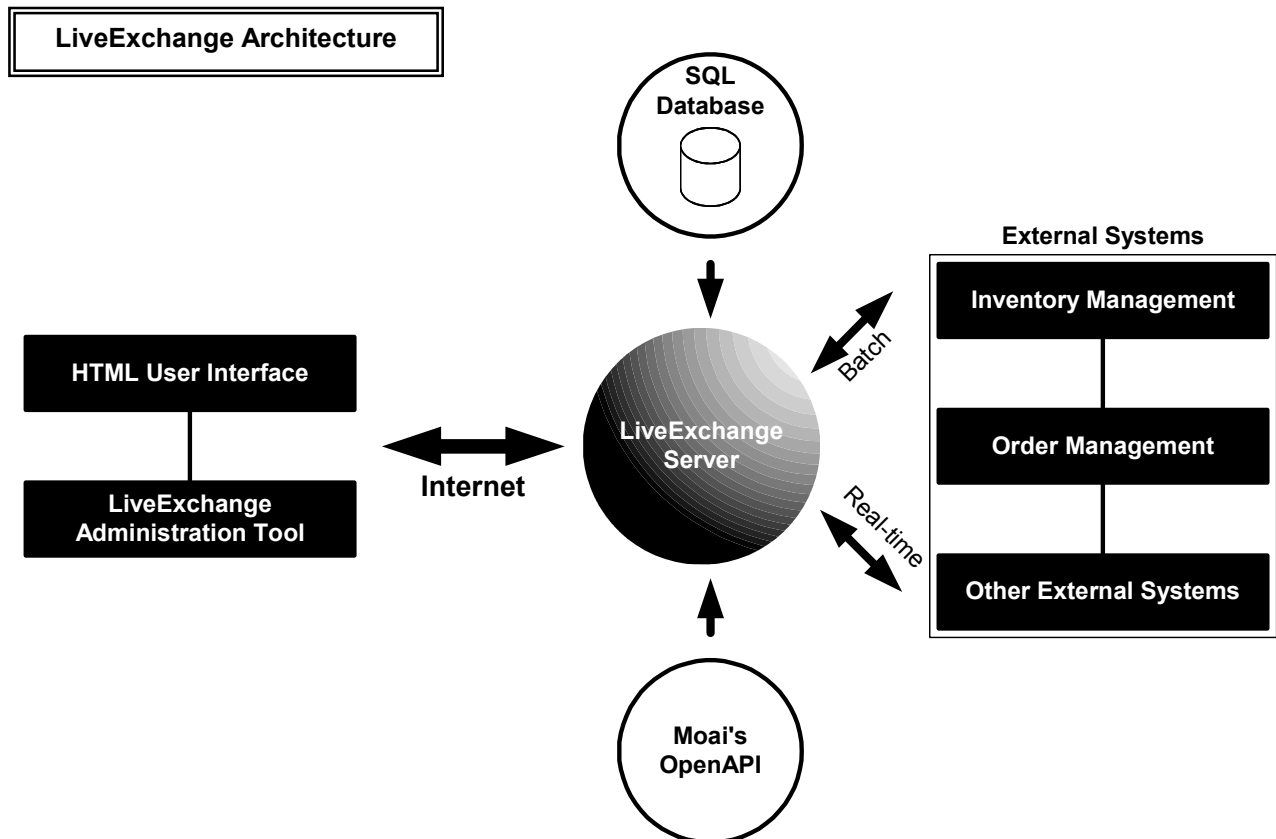
LiveExchange Marketplace:

Designed for vertical marketplaces that bring together groups of buyers and sellers.

The core of the LiveExchange solutions is Moai's Negotiated Commerce Engine (NCE). This technology can be implemented in-house, through Moai's hosting services, or via an Application Service Provider. With each implementation, Moai's Professional Services or one of its partnered systems integrators can be employed for expert business guidance and customization assistance.

LiveExchange Architecture

The underlying technology behind the LiveExchange solutions employs an n-tiered architecture to provide enterprise-level robustness and scalability. The architecture includes a built-in HTTP server that independently manages all interactions with the end-users' browsers, off-loading other system resources while simultaneously streamlining marketplace activity. Overall system responsiveness is further enhanced



by deploying a dedicated cache between the server and the data layer, which provides a JDBC interface to existing databases. As described below, the intelligent caching structure is designed to optimize interactivity needed to support online e-commerce dynamics. Highlights of the architecture include:

- Java™ technology
- A dedicated, intelligent cache
- A bid queue system to ensure bidding integrity
- Real-time updates to the LiveExchange database

A key component of the LiveExchange architecture that provides unmatched robustness and extensibility is the underlying Java technology structure. This structure provides full cross-platform support for the server and administrative tools. In addition, the robust structure and proven industry acceptance of Java technology provides for a better quality programming and execution environment than is achieved with other 3GLs, such as C++ or Perl. Java technology includes built-in support for multi-threaded structures, proven memory management mechanisms and built-in internationalization. Java technology provides a solid underlying foundation for implementing the n-tiered e-commerce environment. Using the Java JIT (Just-in-time) compiler, the Java language code in LiveExchange delivers better overall performance than products developed in more traditional 3GLs such as C and C++.

High-performance across scalable implementations is enhanced by the built-in intelligent cache design. The inherent nature of any e-commerce application, with many immediate and repetitive actions on the same set of data, tends to derive significant benefits from a targeted caching scheme. For a true, real-time dynamic commerce environment, the application must avoid the need to return continually to the database, which inevitably incurs additional network delays and disk I/O overhead. By locally caching all relevant e-commerce-related objects, including data, templates, Java applets, etc., the architecture significantly boosts overall

performance. In addition, the intelligent, multi-threaded nature of the cache allows the LiveExchange to handle thousands of simultaneous requests per minute without any risk of dropped transactions.

To manage peaks in bidding activity, the architecture incorporates a specially designed bid queue that captures all of the bids and securely retains them for subsequent multi-threaded processing by the server. The bid queue design ensures the integrity of all bids in a transaction, regardless of the severity or frequency of traffic spikes and peaks. This ability gives the IT organization greater flexibility for making cost-effective hardware resource deployment decisions. Instead of adding hardware to handle traffic peaks, only to have it underutilized the rest of the time, the organization can rely on the LiveExchange architecture to manage activity. As a result, any ongoing investments to upgrade server resources can be based upon the entire set of requirements to meet overall needs, not just peak activity demands.

Negotiated Commerce Engine (NCE)

The core of the LiveExchange solutions is the Negotiated Commerce Engine, which controls the market, bidding, and clearing rules.

- Market rules define the characteristics of a market, which may include multi-stage negotiations, market open/close times, and product categorization.
- Bidding rules govern the negotiations and include many options that affect the ways in which bids and asks are submitted. In addition to English, Dutch, Vickrey and reverse bidding, LiveExchange solutions also include options for multi-stage negotiations, full or partial quantity bids, overwriting old bids or submitting multiple bids, anonymous bidding, and multiple variants in negotiations.
- Clearing rules determine who wins and on what terms. This determination can be made manually or automatically.

LiveExchange Features

LiveExchange solutions include the most comprehensive feature set of any dynamic commerce application. Multiple pricing formats are available and additional formats can be custom-designed. All formats can be mixed and matched, either by the LiveExchange administrator, or by participants who have been granted privileges to provide items for the marketplace. This functionality provides maximum flexibility to meet specific business objectives (e.g. rapid inventory liquidation versus goods procurement) and can make a site more compelling and exciting to participants by having a variety of market types.

Additionally, a complete set of end-to-end commerce features, such as credit card processing, and end-user features are included. Features available to all of the LiveExchange solutions are listed below:

Structured Negotiation Formats

- Multiple Parameter Negotiations
- Multiple Stage Negotiations
- Limit Bidding
- Expiration Time Stamping
- Threading Negotiation Tracking

Pricing Formats

- English (buyer auction or ascending price auction)
- Dutch (descending price auction)
- Sealed-Bid auction
- Reverse auction
- Fixed price
- Second or lowest price (Vickery) option

Account Management

- Shipping and order tracking
- E-mail Notification
- Item Hotlist
- Profile Management

Marketplace Functionality

- Multiple customizable interfaces
- RFQ/RFP Posting
- Registration Survey
- Third Party Item Posting

- Trade Partner Ratings
- Item Searching
- Credit card processing
- Tax tables

Moai's OpenAPI

The LiveExchange solutions allow extensive Web site and system customization. The architecture includes Moai's OpenAPI for access to core system objects and methods. The OpenAPI allows users to customize the presentation layer and to manipulate the behavior of LiveExchange. LiveExchange solutions use Moai's template architecture, a flexible, template-driven Web page architecture that allows control over Web site branding, functionality, and look-and-feel.

The templates incorporate standard HTML and utilize a Java-based scripting language. This template-based structure is a powerful tool for allowing unfettered access to any server data. For example, in response to an end-user's request for the status of their current bids, the HTTP server would call up the template for "User's Current Bids", retrieve that end-user's information from the database, insert the appropriate data into the template page and finally deliver the Web page. In addition, the templates include many pre-scripted and pre-tested system calls for commonly used functions. For more specific needs, the use of Java technology as the underlying template language gives IT programming staff the flexibility to "drill-down" and fully customize the system.

Because the templates and core system are both driven by Moai's OpenAPI, all aspects of LiveExchange can be customized for the target environment. This API is essentially a collection of specialized "domain objects" that represent all of the data in the system. These collections can include categories such as auction objects, user objects, seller objects, bid objects, etc., as well as groupings of objects, such as the bid objects for a certain date. The API also pre-defines flexible "managers" such as a search-manager for quickly writing a search query to the system. Parameter validation, exception handling, security, and connection and session management are all supported in the OpenAPI. Because the same API

that is used for internal core activities is made available to the customer, IT staff can write efficient Java programs for directly interfacing with external systems.

Unlike a "bolt-on" API that can only provide limited access to a small part of the system, Moai's OpenAPI provides powerful, straightforward links to interface core auction functions with other Web sites, external fulfillment systems, and legacy systems through the use of standard Java methods. The architecture also uses object-to-relational mapping for server objects. This component uses JDBC and native database drivers to access data in a variety of RDBMS servers, including Microsoft™ SQL and Oracle™ databases.

Negotiated Commerce Markup Language (NCML)

Moai has developed NCML, a standard XML implementation for dynamic commerce in exchanges, auctions, and procurement, to augment the OpenAPI. NCML allows businesses to develop solutions that exchange data with existing legacy systems and other trading networks. For example, NCML defines a document for an auction, which includes a product or service description, the type of auction (e.g. reverse, Dutch, sealed bid), any reserve price, etc.

LiveExchange Security

For flexible implementation of both non-secure and secure online transactions, the architecture allows connections through either standard HTTP or secure HTTPS, along with SSL encryption and support for both server-side and client-side certificates. Built-in data level security is also a fundamental aspect of the underlying architecture, enabling the hosting administrator to maintain full control over end-user's access and rights to any object. For instance, the host administrator could provide certain classes of end-users with rights to see particular categories of auctions, but could withhold the rights to bid on them. Because the data level security mechanisms are fully integrated with all query operations, the architecture gives IT programmers an easy-to-use

method for controlling security throughout the entire system.

LiveExchange Administration Tool

The LiveExchange Administration Tool includes a variety of features to make system administration simple and straightforward. The administration tool provides an easy-to-use graphical interface to the LiveExchange system. A variety of standard reports are also included, which can be modified to fit a company's needs.

Administrative Features

- Java Technology-based Administration Tool
- Remote Administration and Configuration
- Activity Tracking and Reporting
- Flexible Categorization
- Activity Tracking
- User roles and Security Settings
- Advertising from Internal or External Advertisement Servers

Internationalization

LiveExchange solutions currently have an extensive array of internationalization capabilities such as the creation of templates and Web pages in multiple languages. Users can then set preferences for their geographic location and LiveExchange will serve the appropriate Web template pages and handle currency calculations.

Internationalization Features

- Multiple Language Product Descriptions
- Multiple Currencies and Automatic Currency Conversion
- Multiple Sets of Categories
- User Locale Tracking

Moai Professional Services

Complete customer satisfaction is the goal of Moai Professional Services and its industry leading partners. To achieve this goal, Moai offers additional assistance through the Professional Services team and its partners who work closely with customers to provide well tailored, forward thinking solutions. Rapid deployment and

maximizing the return on a Moai investment are also key objectives of the Moai team.

The full range of expertise, services and tools needed for a successful design, implementation and ongoing operation are provided through Moai and its world-class partners. Moai has teamed with the leaders in systems integration, application service provision (ASP), and other complementary services and products. Moai's services are available to assist companies who are implementing and hosting their own dynamic commerce marketplace and for companies who prefer to outsource hosting.

For companies that host their own LiveExchange solutions, Moai's Professional Services and its partners provide start to finish assistance including:

Technical Account Management

When a company joins the Moai community, a Technical Account Representative is assigned to lead the overall deployment effort and assist in building the commerce site. This staff member becomes the main contact and partner at Moai and is responsible for ensuring that business objectives are consistently met before, during and after implementation.

Training

The Moai Professional Services team provides formal, hands-on training sessions that cover deployment, management and maintenance of the LiveExchange solution. Through tailored, interactive seminars, the team transfers expertise on the installation, administration, customization, integration and optimal use of the chosen solution. At the end of the training, participants have the tools and skills needed for deployment and to maintain a dynamic commerce site.

Branding

The Moai team and partners can help customers differentiate an auction, procurement or trading exchange Web site. The team offers expert services to customize the look and feel of the site to meet customer specifications, and if assistance is needed, Moai can help define those specifications. This ensures a consistent look and

feel with a current online presence to maintain corporate image and brand equity.

Customization and Integration

Customizing the functionality of the site and integrating it with existing back-end business systems is integral to running a highly successful commerce site. The Moai Professional Services team or a system integrator partner will work to ensure this critical functionality is properly designed and implemented. Combining a company's knowledge of their internal systems with Moai's LiveExchange solutions expertise ensures a solid and seamless integration.

Installation

The Moai Professional Services team and partners can quickly and expertly install the LiveExchange solution to ensure customers meet time-to-market goals.

Domain Expertise

Throughout the entire process of bringing a LiveExchange solution to the Web, Moai's Professional Services team and partners can provide the industry's most progressive expertise in dynamic pricing, across a wide range of business scenarios. Moai and its partners offer business and technical consulting in many areas, including dynamic commerce strategies, budgeting and technical capabilities. Moai helps customers leverage the power of the LiveExchange solutions by properly aligning its capabilities with a customer's business goals to ensure that the end result solution meets the customer's needs.

Hosting Services

Moai's hosting services are a cost-effective, full-service, turnkey solution available for companies that must meet e-commerce demands immediately. As part of its comprehensive service, Moai installs, configures, and maintains the customer dynamic commerce site. Moai provides functional customization, including integration with existing backend processes and logistics functions that are critical to making a dynamic commerce site successful. Moai's services include designing the site to reflect the company's brand, customizing functionality, and

conducting all data preparation. In addition, Moai will manage the exchange, perform maintenance, notify customers about bid status, and generate a range of reports.

Moai's partnerships with business-to-business integrators and e-commerce service providers allow customers to benefit from an enhanced solution. Moai can carry out functional customization work, such as integration with shipping, logistics, tax and policies.

Moai's hosting services support multiple pricing formats, including English, Dutch, and reverse auctions, international currency functionality, and reporting capabilities that allow companies to maximize their understanding of market activity and use this information to create the most effective dynamic commerce solution. Built upon the same proven architecture that supports the LiveExchange solutions, the hosting option does not require up-front investments in hardware, additional bandwidth, and new IT personnel—Moai installs, builds, and maintains the site.

CONCLUSION

Dynamic commerce applications offer a new Web-based channel for many companies. By implementing these virtual marketplaces, forward-thinking companies can quickly gain compelling business advantages, including:

- Rapid return on investment
- Maximized revenues through competitive bidding
- Minimized sales channel conflict
- Strengthened company brand
- Reduced administrative costs
- Streamlined processes

Careful consideration should be given to the criteria for evaluating dynamic commerce solutions. Among the most important criteria are the enterprise-level architecture, the flexibility of the system, the “must-have” features in the application—plus a “total solutions” commitment from the solution provider to ensure successful integration, ease of administration, and ongoing extensibility of the system.

Developing the right system that is customized to meet a company's needs and customer base can create powerful new sales or procurement channels with a rapid return on investment. By taking into consideration each of the steps documented in this paper, companies can create the truly successful online auction and trading exchange environments needed to stay at the forefront of the Internet's new wave of dynamic commerce opportunities.

Moai's LiveExchange solutions provide a standards-based, enterprise-level software solution that is designed specifically to allow corporations to enter the new dynamic commerce marketplace. Companies can either host their own marketplaces or outsource

hosting to Moai or to one of Moai's premier partners. These marketplaces can be private exchanges with key customers or open public exchanges to expand the customer base. The architecture's flexibility can even empower third party intermediaries to create targeted marketplaces for bringing together businesses and consumers within a specific market segment.

The inherent scalability of the LiveExchange server provides tight control over all critical functions without sacrificing either performance or growth capacity. With full cross-platform support for a variety of databases and operating systems, LiveExchange solutions empower IT organizations to integrate existing investments and knowledge. By combining a high degree of robust scalability and real-time performance mechanisms within a flexible and extensible architecture, LiveExchange solutions are designed to give IT staff both the tools and the flexibility to tailor powerful e-auction capabilities into their existing environments.

LiveExchange solutions are the most feature-rich of any dynamic commerce application, having a wide array of end-user functions, including multiple language support, and easy-to-use control and reporting tools for administrators. Finally, to ensure a successful implementation, Moai Professional Services provides extensive training and support throughout the deployment cycle.

For more information on the LiveExchange solutions, the LiveExchange Product Brochure provides a comprehensive list of features and support services. This document is available by contacting Moai or visiting Moai's Web site www.moai.com.







ABOUT MOAI

Moai is a leading provider of dynamic commerce solutions for online exchanges, auctions, and procurement. Dynamic commerce involves the buying and selling of goods and services online through flexible transaction models that change over time based on multiple terms such as price, condition of goods, warranty and shipping costs. Moai's solutions address the unique challenges faced by companies looking to initiate or expand their e-commerce initiatives in the technologically complex and rapidly changing Internet business climate. While Moai's primary focus is on customers in the business-to-business market, the company also has customers in the business-to-consumer and consumer-to-consumer markets.

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